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SALAMANDERS COLLECTED IN WEST-CHESTER COUNTY, N. Y.

1. *Amblystoma opacum* Gravenh.
2. *Amblystoma punctatum* Linn.
3. *Amblystoma jeffersonianum* Green.
4. *Hemidactylum scutatum* Tschudi.
5. *Plethodon cinereus* Green.
6. *Plethodon cin. erythronotus* Green.
7. *Plethodon glutinosus* Green.
8. *Spelerpes bilineatus* Green.
9. *Spelerpes ruber* Daudin.
10. *Desmognathus fusca* Raf.
11. *Diemyctylus viridescens* Raf.
12. *Diemyctylus vir. miniatus* Raf.

All these salamanders have been found by the writer to be fairly abundant, except the three species given below:

Amblystoma jeffersonianum Green, is my latest find. One specimen, only, was taken at Silver Lake Park, near White Plains, N. Y., about 1,000 feet from the lake, on a hill in the woods, at an altitude of about 100 feet from the level of the lake. The salamander was under a large flat rock, exposed to full sunshine, in soft, perfectly dry, almost dusty soil. It was covered with dust, but upon being handled, this rubbed off, and showed the salamander in its typical coloring. The color is dark brown above, with small, light blue spots on the sides, limbs, and sides of the tail; undersides bluish-black to gray. Length 4 $\frac{3}{4}$ inches from tip of snout to tip of tail. Following is a condensed description taken from Bulletin No. 34, U. S. Nat. Mus., pp. 89-92:

"Body cylindrically more slender . . . than *A. Punctatum*. . . . The head is elongated, with muzzle obtuse The eyes are large the gular fold is distinct that behind the angle of the jaws is inconspicuous, as is the lateral parotoid furrow. There are twelve costal furrows. The tail is a little shorter than the body and head. It is oval in cross-section in the middle without any ridge or crest it becomes more and more compressed towards the tip. The limbs are largely developed and the toes very long. The digits are cylindrical and

without any basal web."

These external identification characters correspond exactly with the specimen.

Hemidactylium scutatum Tschudi has been taken repeatedly at Silver Lake Park, in the hills near the lake, usually in or under decaying logs. At first glance it resembles a pale specimen of *Plethodon cinereus erythronotus*, but the color is more nearly yellowish-brown. The undersides decide the question, being pure milky-white with small dark dots in *Hemidactylium* but lead colored, or pinkish-gray in *Plethodon*. The costal grooves are also very much more pronounced than in the other genus.

Spelerpes ruber Daud., one specimen (young), found in a brook near Silver Lake, is too well known to require description here. I only mention it on account of its apparent rarity in the district.

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ON ALFARO CULTRATUM.

Alfaro cultratum is one of the most interesting of the killifishes, and is abundant in the swift streams of certain portions of the lower Caribbean slopes of Costa Rica. Its most curious feature is a double row of scales that extend below the ventral body line, forming a thin edge, which is continuous with the keel formed by the flattened anterior portion of the body,

This is an evident adaptation for life in the very fast water which the fish inhabits, although the species does very well in an ordinary aquarium. It is one of the live bearing forms, and on one occasion a captive female approximately 70 mm. in length gave birth to 65 young, and, about three months later, to 75. The young average about 7 mm. in length, and the scales of the keel are plainly visible when the fish is held in a proper light. Most live-bearing Poeciliidae breed the year round in aquaria, and it seems probable that, where conditions are favorable, they do so also in the wild state.

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